

Applicants first explain generally that both *Rubin et al.* and *Withoos* disclose technology for strengthening a reflector with reinforcing *ribs*, not *grooves*. Furthermore, the “reinforcing groove structure” of the present invention is formed at least in the periphery of the reflective surface to increase the rigidity of the thin-film curved body. That is, applicants’ reinforcing groove structure is formed in the reflective surface and not on the opposite side of the reflective surface. Not only do *Rubin et al.* and *Withoos* teach reinforcing a reflector by adding strengthening means to the *back* of the reflector, but the strengthening means added includes *ribs* instead of *grooves* as claimed. Moreover, the reinforcing ribs are formed by injection molding whereas the reinforcing groove structure of the present invention is molded by stress relaxation while molding the thin-film curved body. Thus, the invention becomes ultra-light and rigid and thereby solves the problem in the prior art of increasing weight when increasing rigidity. In these respects, applicants’ invention differs drastically from the *Rubin et al.* and *Withoos* reflectors.

Applicants now explain even more specifically how the disclosures of *Rubin et al.* and *Withoos* do not support the claim rejection.

Both *Rubin et al.* and *Withoos* disclose antenna reflectors and molds (or “moulds,” using the British spelling) for their manufacture. In *Rubin et al.*, Fig. 3 shows the finished antenna reflector, and Fig. 2 shows the molding tool. In *Withoos*, Fig. 5 shows the finished antenna reflector, and Figs. 1 and 2 shows the molding tool. Please note that part of the *Withoos* mold is constructed as a matrix. (Column 2, lines 9-11.) In both *Rubin et al.* and *Withoos*, the molds (as opposed to the reflectors themselves) have a series of recesses or grooves to provide bosses or ribs in the reflectors for reinforcing support. (*Rubin et al.*, column 2, line 54; *Withoos*, column 3, lines 52-57.)

Base claim 1 describes a wave concentrator that includes a “reinforcing *groove* structure” (*emphasis added*) formed in at least part of its reflective surface to increase rigidity. Claims 2-6 depend from claim 1, so they also describe this subject matter. That is, the claimed invention is reinforced by grooves instead of by bosses or ribs, as in *Rubin et al.* and *Withoos*.

The rejection is improper, because the prior art relied upon does not teach or suggest every feature recited in the claims. (MPEP § 2143.) The rejection relies on *Rubin et al.* as the primary reference, but *Rubin et al.* is not relied upon to teach the “reinforcing groove structure” recited in the claims. (As discussed above, *Rubin et al.* teaches the use of ribs instead for support.) In view of the failure of *Rubin et al.* to teach the “reinforcing groove structure,” the rejection relies on *Withoos* to suggest modifying the *Rubin et al.* antenna reflector to have a “reinforcing groove structure” as claimed.

However, as discussed in detail above, *Withoos* discloses an antenna reflector with reinforcement ribs instead of a “reinforcing groove structure.” Thus, *Withoos* would have suggested modifying the *Rubin et al.* antenna reflector to have the claimed “reinforcing groove structure.”

Applicants acknowledge above the statement in the Office Action at the beginning of the first full paragraph on page 3, which states that *Withoos*, in column 3, lines 44-55, discloses supporting a reflector with a structure that is recessed or grooved. However, a reference to the cited text shows otherwise, that the recesses or grooves are in the matrix of the manufacturing mold. The analogous elements in *Rubin et al.* are recesses 26 and 28 of its manufacturing mold. Given that *Rubin et al.* already has a mold with elements that are analogous to the recess/grooves of *Withoos* (which produce reinforcing bosses/ribs in the finished reflectors), there is no reason to think that *Withoos* would have suggested modifying the *Rubin et al.* antenna reflector to have

a "reinforcing groove structure" as claimed. The *Rubin et al.* antenna reflector already has support ribs 27 for reinforcement.

Therefore, the obviousness rejection cannot be proper. Accordingly, applicant requests the withdrawal of the obviousness rejection.

If after considering the reasoning put forth above the Examiner ultimately decides to maintain the rejection, applicants request that she explain why it would be proper to rely on the *Withoos* teaching of recesses or grooves in a matrix as a teaching of grooves in a reflector instead.

In view of the remarks above, applicants submit that the application is in condition for allowance. Accordingly, a Notice of Allowability is hereby requested. If necessary, the Examiner is welcome to contact applicants' undersigned attorney to discuss resolution of any remaining issues.

If this paper is not timely filed, applicants petition for an extension of time. The fee for the extension, and any other fees that may be due, may be debited from Deposit Account No. 50-2866.

Respectfully submitted,
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